REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 30-37 and 44-58 are in the case.

I. ELECTION/RESTRICTIONS

It is noted, with appreciation, that the lack of unity requirement previously presented by telephone to the undersigned on July 11, 2006 has been withdrawn.

II. THE ANTICIPATION REJECTION

Claim 52 stands rejected under 35 U.S.C. §102(e) as allegedly anticipated by U.S. Patent 6,380,136 to Bates et al. That rejection is respectfully traversed.

Claim 52 claims a method of inhibiting scale formation in a subterranean formation comprising (a) injecting a suspension comprising particles of a controlled release scale inhibitor suspended in an aqueous medium into a formation through an injection well wherein the particles have a mean diameter of less than 1 micron; (b) allowing the suspension to percolate through the subterranean formation towards a production well; and (c) controllably releasing the scale inhibitor from the particles in the near well bore region of the production well.

The claimed method involves injecting a suspension comprising particles of a controlled release scale inhibitor suspended in an aqueous medium into a formation through an "injection" well. The dictionary "A Dictionary of Petroleum Terms". Third Edition (copy attached), defines "injection well" as "a well in which fluids have been injected into an underground stratum to increase reservoir pressure".

The injection well referred to in claim 52 is not the same target as Bates, where the particles are designed to be injected into a *production* well. Thus, according to Bates (col. 1, lines 21-29), to minimize scale build-up, scale inhibitor is injected by force into the formation via a production well. Based on this, it is clear that Bates does not disclose the method of claim 52. Withdrawal of the anticipation rejection based on Bates is accordingly respectfully requested.

III. THE OBVIOUSNESS REJECTION

Claims 30-58 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent 5,089,150 to Hen, in view of Bates. That rejection is respectfully traversed.

Claim 30 claims particles of an esterifiable scale inhibitor cross-linked with a polyol via ester cross-links. The particles have a mean diameter of less than 1 micron.

Hen discloses a scale inhibiter comprising a cross-linked, carboxylated polymer which is used in the form of an aqueous solution. There is no suggestion in Hen that the polymer could or should be used in any solid form, and certainly no suggestion that solid particles with a defined particle size (particularly that as claimed) would be useful.

Bates does not cure the above-noted deficiencies of Hen. While Bates discloses the use of solid particles which may have the size required by the present invention, Bates is irrelevant since Bates is concerned with extending the lifetime of a scale inhibitor once injected. Bates solves this problem by protecting particles of the inhibitor with a coating. In the absence of the coating, the scale inhibitor would be rapidly released into solution. While the particles of the present invention may be coated, the

present invention does not rely upon the presence of a coating to achieve its technical effect. Bates envisages that particles may have a small particle size, but there is nothing in either Hen or Bates to suggest that particles having a mean diameter of less than 1 micron might confer any advantage.

As noted earlier, the particles of the present invention are designed to be injected into an *injection* well (this is reflected in claim 52, and claims dependent thereon). This is not the same target as Bates, where the particles are designed to be injected into a *production* well (see Bates, col. 1, lines 21-29, where, in order to minimize scale build-up, scale inhibitor is injected by force into the formation via a production well). After injection, the production well is shut-in during which time the scale inhibitor is absorbed within the formation. After the shut-in operation, the production well is returned on stream. The continual need for such treatments is costly.

In contrast, the particles of the present invention are designed so that no shut-in is required. They are introduced via the injection well, and from there they must propagate through the formation to the near-well region of a production well, where the scale inhibitor is released by hydrolysis (see p.2 lines 23-28 of the present specification). The aqueous medium of the suspension therefore has the dual functions of transporting the particles of controlled release scale inhibitor to the near well region of the production well and of either increasing or maintaining the reservoir pressure. Neither Hen nor Bates contains any suggestion that any particular size of particles is likely to be suitable for this method of use.

In addition, the processing of the specific scale inhibitor of the present invention, i.e. a material cross-linked with a polyol via ester cross-links, presents particular

problems. The above discussion has assumed that the person of ordinary skill would have been able to apply Bates to the materials disclosed in Hen (should that person have wished to do so). However, this is not the case. All of Examples 1 to 4 of Hen, demonstrate that the desired material is produced as a viscous product, and this product is then used in Example 5 in the form of a solution.

If the skilled person had then decided to combine Bates and Hen, significant difficulties would have been encountered. All of the materials used in Bates are initially prepared in the form of an aqueous solution, which is then converted into soft particles by spray-drying. Thus, in Example 1 of Bates, the scale inhibitor is obtained in the form of a solution which is spray-dried and subsequently ball-milled in the presence of suitable polymer to produce coated particles. In the present invention (see Examples), on the other hand, the initially produced viscous material (which is generally in the form of a solid rubber-like gel) is dried to produce a solid (which is hard and glassy). This solid is then pulverized by milling. This method is not disclosed or suggested in Bates, and it is not immediately apparent that the method disclosed in Bates would work for the materials of Hen. One of ordinary skill would not therefore have any expectation of success based on the combined disclosures of Bates and Hen.

In summary, the person of ordinary skill, looking to improve the materials of Hen for use *in an injection well*, would not have found the answer in Bates. It is clear therefore that one of ordinary skill would have had no incentive or motivation to resort to the combined disclosures of Hen and Bates to make such particles or expect to that such particles would possess useful properties. Absent any such motivation, a *prime facie* case of obviousness of the presently claimed invention has not been generated in

this case. Reconsideration and withdrawal of the outstanding obviousness rejection are accordingly respectfully requested.

Favorable action on this application is awaited.

Respectfully submitted,

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